WO 2004/092550 PCT/NL2003/000458

13

## CLAIMS

- 1. A valve gear comprising a housing provided with a passage, a valve member arranged within said housing, 5 which is movable between a first, closed position, in which the passage is closed, and a second, open position, a piston connected to the valve member, which can oscillate in an at least substantially closed piston chamber, and locking means which are capable of holding the valve member periodically in the closed position, 10 wherein the piston chamber is provided with at least three closable openings, which may each be in communication with gas pressure means, wherein the first opening and the second opening are each in communication with another part of the piston chamber separated 15 therefrom by the piston, and which are open when the valve member is held in the closed position, and wherein the third opening is open during movement of the piston.
- 20 2. A valve gear according to claim 1, wherein the locking means comprise a projection and a curved guideway, which are movable relative to each other, wherein the part of the guideway against which the projection abuts in the closed position of the valve member extends

  25 substantially transversely to the direction of movement of the valve member, in such a manner that the movement of the valve member is blocked.
- 3. A valve gear according to claim 2, wherein the locking
  means comprise a tappet, which is capable of striking
  against the projection and/or the guideway to release
  the locked position thereof.

WO 2004/092550 PCT/NL2003/000458

4. A valve gear according to claim 2 or 3, wherein the guideway is formed in a rotatable sleeve, which can rotate around a stem within the housing, with the stem linking the valve member and the piston together.

5

- A valve gear according to any one of the preceding claims 1 4, wherein the piston chamber and the valve member are present in separate parts of the housing,
   which housing parts are resiliently connected.
  - 6. A valve gear according to claim 5, wherein the two housing parts are connected by means of an elastic ring.
- A method for opening and closing a passage, wherein a 15 7. valve member mounted within a housing is reciprocated between a first, closed position, in which the passage is closed, and a second, open position, by means of a piston connected to the valve member, which piston oscillates within an at least substantially closed 20 piston chamber, wherein locking means periodically hold the valve member in the closed position, and wherein the piston chamber is connected to gas pressure means, which set predetermined gas pressure levels on either side of the piston during the period that the valve member is 25 held in the closed position, and wherein the gas is supplied to the piston chamber or discharged from the piston chamber during movement of the piston.
  - 30 8. A method according to claim 8, wherein gas is discharged from the part of the piston chamber remote from the valve member during movement of the piston.

WO 2004/092550 PCT/NL2003/000458

15

9. A valve gear comprising a housing provided with a passage, a valve member mounted within said housing, which is movable between a first, closed position, in which the passage is closed, and a second, open position, a piston connected to the valve member, which can oscillate in an at least substantially closed piston chamber, wherein the piston chamber and the valve member are present in separate parts of the housing, which housing parts are resiliently connected.

5

10